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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,173

07/17/2006

HirotaKa Kawabata

MAT-8856US

2828

52473

7590

05/09/2011

RATNERPRESTIA

P.O. BOX 980

VALLEY FORGE, PA 19482

EXAMINER

BOBISH, CHRISTOPHER S

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

05/09/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/586,173

Applicant(s)

KAWABATA ET AL.

Examiner

CHRISTOPHER BOBISH

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3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 February 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-9 is/are pending in the application.
- 4a) Of the above claim(s) 10-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

The response filed by the applicant on 11/16/2009 with respect to the non-final action of 08/14/2009 has been considered and is sufficient to overcome the previous rejection in view of Mills and Bowers.

The response to the request for information filed on 02/16/2011 has been considered by the examiner.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414).

Kwon teaches:

limitations from claim 1, a refrigerant compressor (**FIG. 2**) comprising: a hermetic container (**24**) which internally stores oil (**62**) and also accommodates a

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compression mechanism **(28)** for compressing refrigerant gas **(C. 4 Lines 11-20)**, wherein the oil is between a viscosity grade not lower than ISO VG3 to a viscosity grade not higher than ISO VG 8 **(C. 3 Lines 38-40)**;

**Furthermore, it would have been obvious to one having ordinary skill in the art of compressors at the time of the invention to use an oil within the range of claim 1, as suggested by Kwon for the reasons stated above (lubrication, reduced sludge, etc), since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum value or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.**

Kwon does not teach that the oil is a blended oil.

Ponsford teaches:

limitations from claim 1, a blended oil consisting of multiple components; a first component oil having a boiling point at 350 degrees Celsius or more (portion 5-6 from Table 1), and a second component having a boiling point of 300 degrees Celsius or less (portion 4 from Table 1); the specific ratios of the component oils are not explicitly taught, however Ponsford does teach that any ratio can be chosen to constitute a blended oil (C. 6 Lines 50-65); the viscosity of the oil is not specifically disclosed, rather it is compared to existing light oils, i.e. diesel (C. 5 Lines 24-30); existing diesels are known to be within a viscosity range of VG3-VG8 (Kim is cited as a teaching reference, C. 4 Lines 16-19 disclose a viscosity of 50-56 SSU at 100 degrees Fahrenheit which converts to below VG8); Thus Ponsford teaches a blend of component oils each having the characteristics recited in claim 1, forming a final oil with a viscosity as in claim 1, that is suggested for use in lubrication and refrigeration systems (C. 7 Lines 57-64);

It would have been obvious to one of ordinary skill in the art of compressors at the time of the invention to use the oil blend taught by Ponsford in the compressor of

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Kwon, in order to provide a lubricant having desirable properties over varying temperatures, consistent viscosity and a rust inhibition (C. 7 Lines 16-30 of Ponsford).

Kwon, Ponsford and Kim disclose and teach of the refrigerant compressor in claim 1.

Kwon further teaches:

limitations from claim 3, wherein the refrigerant is R600a (C. 5 Lines 31-46) and the oil is a mineral oil or synthetic (C. 5 Lines 50-55);

limitations from claim 5, wherein the compression mechanism is a reciprocating mechanism (C. 4 Lines 11-20);

Claims 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414) as applied to claims 1, 3, 5 above, and in further view of Seiki (US Patent No. 5,108,634).

Neither Kwon, Ponsford nor Kim teaches that the oil is provided with a phosphorous extreme pressure additive, but Seiki does.

Seiki teaches:

limitations from claim 4, wherein phosphorous extreme pressure additive is added to a refrigerant oil (C. 3 Lines 49-51 and C. 4 Lines 13-17);

It would have been obvious to one having ordinary skill in the art of compressors to use a pressure additive as is taught by Seiki in the compressor taught by Kwon and modified by Ponsford and Kim, in order to increase the effectiveness of the oil in under pressures created by the compressor.

Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414) as applied to claims 1, 3 and 5 above, and in further view of Nagai et al (US Patent No. 6,054,224).

Kwon teaches:

limitations from claim 6, an electric motor (FIG. 2 (26) C. 4 Lines 14-15), for driving a compression mechanism (28);

Neither Kwon nor Ponsford nor Kim teaches that the motor uses a low oligomer insulating material, but Nagai does.

Nagai teaches:

limitations from claim 6, an insulating material for an electric motor having low amounts of oligomers, for use in refrigeration systems, specifically compressors (C. 1 Lines 5-15);

It would have been obvious to one having ordinary skill in the art of compressors at the time of the invention to use low oligomer type insulation on the motor of the compressor taught by Kwon and modified by Ponsford and Kim, in a manner as taught by Nagai, in order to reduce the environmental damage caused by the compressor (C. 1 Lines 10-15 and Lines 42- 45 of Nagai).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414) in view of Nagai et al (US Patent No. 6,054,224) as applied to claims 1, 3, 5 and 6 above, and in further view of Egawa et al (US PGPub No. 2006/0166844 A1).

Kwon, Ponsford, Kim and Nagai disclose and teach of the compressor in claims 1 and 6.

Neither Kwon nor Ponsford nor Kim nor Nagai discusses evaporation temperature, but Egawa does.

Egawa teaches in Page 1 paragraphs [0001, 0002, 0007-0009] of a lubricating oil composition having low evaporation loss and low viscosity; paragraph [0002] teaches specifically that combinations of oils having different evaporation temperatures results in unwanted viscosity levels; paragraph [0008] further teaches that kinematic viscosity is related to the evaporation losses of an oil;

It would have been obvious to one having ordinary skill in the art of compressors at the time of the invention to seek a consistent evaporation temperature across the oil composition in order to accurately control the properties (viscosity) of the oil during use. Furthermore, because the kinematic viscosity is directly related to the evaporation of the oil, it is obvious that oils within a small range of viscosities would likely have similar evaporation temperatures.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414) in view of Nagai et al (US Patent No. 6,054,224) as applied to claims 1, 3, 5 above, and in further view of Hannibal (US Patent No. 4,252,506).

Kwon, Ponsford, Kim and Nagai teach and disclose of the compressor in claims 1 and 6. Kwon teaches an electric motor (26) with windings (FIG. 2 (42) C. 4



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Lines 30-31);

Neither Kwon, Ponsford, Kim nor Nagai explicitly teach a distributed winding, but Hannibal does.

Hannibal teaches:

limitations from claims 8 and 15, an electric motor (FIG. 3 (16) C. 3 Line 22), in a compressor (FIG. 3 (10) C. 3 Lines 20-21), wherein the motor is a distributed winding motor (C. 5 Lines 8-11);

It would have been obvious to one having ordinary skill in the art of compressors at the time of the invention to substitute the winding structure taught by Hannibal and as is known in the art into the compressor motor of Kwon as modified by Ponsford, Kim and Nagai, in order to achieve predictable results in meeting the driving demands of the compressor and system.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414) in view of Nagai et al (US Patent No. 6,054,224) as applied to claims 1, 3, 6 and 13 above, and in further view of Yamazaki et al (US Patent No. 6,940,204 B2).

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Kwon, Ponsford, Kim and Nagai teach and disclose of the compressor in claims 1 and 6. Kwon teaches an electric motor (26) with windings (FIG. 2 (42) C. 4 Lines 30-31);

Neither Kwon, Ponsford, Kim nor Nagai explicitly teach a concentrated winding, but Yamazaki does.

Yamazaki teaches:

limitations from claim 9, wherein an electric motor for a compressor is a concentrated winding motor (C. 1 Lines 15-19 and 27-37);

It would have been obvious to one having ordinary skill in the art of compressors at the time of the invention substitute the winding structure taught by Yamazaki into the compressor motor of Kwon as modified by Ponsford, Kim and Nagai, to achieve predictable results in reducing the size of the motor and compressor (C. 1 Lines 27-37 of Yamazaki).

### ***Response to Arguments***

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER BOBISH whose telephone number is (571)270-5289. The examiner can normally be reached on Monday through Thursday, 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571)272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Bobish/  
Examiner, Art Unit 3746

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